AMENDMENTS TO THE CLAIMS

(including complete listing of the claims)

1. (Previously Presented) A method for predicting a hypoglycemic event in a subject, said method comprising

determining (i) a threshold glucose value that corresponds to said hypoglycemic event, and (ii) at least one threshold parameter value that is correlated with said hypoglycemic event, wherein at least one threshold parameter value is skin conductance or temperature;

obtaining a series of glucose measurement values at selected time intervals using a method comprising

extracting a sample comprising glucose from the subject using a transdermal sampling system that is in operative contact with a skin or mucosal surface of said subject;

obtaining a raw signal specifically related to a glucose amount or concentration in the subject;

correlating the raw signal with a glucose measurement value indicative of the amount or concentration of glucose present in the subject at the time of extraction;

repeating said obtaining and correlating to provide a series of measurement values at selected time intervals;

predicting a measurement value at a further time interval subsequent to said series of measurement values; and

comparing said predicted measurement value to said threshold glucose value, wherein a measurement value lower than the threshold value is designated to be hypoglycemic;

measuring at least one parameter value or trend of parameter values concurrently, simultaneously, or sequentially with said obtaining of the series of measurement values, wherein the parameter value or trend of parameter values is (i) correlated with said hypoglycemic event, and (ii) reflective of skin conductance readings or temperature readings of the subject, and comparing said parameter value or trend of parameter values with said

threshold parameter value to determine whether said parameter value or trend of parameter values indicates a hypoglycemic event; and

predicting a hypoglycemic event in said subject when both (i) comparing said predicted measurement value to said threshold glucose value indicates a hypoglycemic event at said further time interval, and (ii) comparing said parameter value or trend of parameter values with said threshold parameter value indicates a hypoglycemic event.

2. (Original) The method of claim 1, wherein the selected time intervals are evenly spaced.

3. (Original) The method of claim 1, wherein the series of measurement values comprises three or more discrete values.

4. (Previously Presented) The method of claim 3, wherein the further time interval occurs one time interval after the series of measurement values.

5. (Previously Presented) The method of claim 1, wherein parameter values or trend of parameter values for both skin conductance readings and temperature readings are used to predict the likelihood of a hypoglycemic event at said further time interval.

6. (Original) The method of claim 3, wherein said predicting of the measurement value at a further time interval is carried out using said series of three or more measurement values in a series function represented by:

$$y_{n+1} = y_n + \alpha(y_n - y_{n-1}) + \frac{\alpha^2}{2}(y_n - 2y_{n-1} + y_{n-2}) \qquad (7)$$

wherein y is the measurement value of glucose, n is the time interval between measurement values, and α is a real number between 0 and 1.

7. (Currently Amended) The method of claim 6, wherein the series function is used to predict the value of y_{n+1} ~~and the~~ wherein time interval n+1 occurs one time interval after the series of measurement values is obtained.

8-9. (Canceled)

10. (Previously Presented) The method of claim 1, wherein a sample comprising glucose is extracted from the subject into one or more collection reservoirs to obtain an amount or concentration of glucose in a reservoir.

11. (Original) The method of claim 10, wherein the one or more collection reservoirs are in contact with the skin or mucosal surface of the subject and the sample is extracted using an iontophoretic current applied to said skin or mucosal surface.

12. (Original) The method of claim 11, wherein at least one collection reservoir comprises an enzyme that reacts with the extracted glucose to produce an electrochemically detectable signal.

13. (Original) The method of claim 11, wherein said enzyme is glucose oxidase.

14. (Original) The method of claim 1, wherein said obtaining of the series of glucose measurement values is performed using a near-IR spectrometer.

15. (Previously Presented) A glucose monitoring system for measuring glucose in a subject, said system comprising, in operative combination:

a sensing mechanism in operative contact with the subject or with a glucose-containing sample extracted from the subject, wherein said sensing mechanism obtains a raw signal specifically related to glucose amount or concentration in the subject;

a first device to obtain skin conductance readings or temperature readings from the subject; and

one or more microprocessors in operative communication with the sensing mechanism, wherein said microprocessors comprise programming to (i) control the sensing mechanism to obtain a series of raw signals at selected time intervals, (ii) correlate the raw signals with measurement values indicative of the amount or concentration of glucose

present in the subject to obtain a series of measurement values, (iii) predict a measurement value at a further time interval, which occurs after the series of measurement values is obtained, (iv) compare said predicted measurement value to a predetermined value, wherein a predicted measurement value lower than the predetermined value is designated to be hypoglycemic, (v) control the first device for measuring skin conductance readings or temperature readings of the subject, (vi) compare said skin conductance readings or temperature readings with a threshold parameter value or trend of parameter values to determine whether said skin conductance readings or temperature readings indicate a hypoglycemic event, and (vii) predict a hypoglycemic event in said subject when both (a) comparing said predicted measurement value to said threshold glucose value indicates a hypoglycemic event at said further time interval, and (b) comparing said skin conductance readings or temperature readings with a threshold parameter value or trend of parameter values indicates a hypoglycemic event.

16. (Original) The monitoring system of claim 15, wherein the sensing mechanism comprises a biosensor having an electrochemical sensing element.

17. (Original) The monitoring system of claim 15, wherein the sensing mechanism comprises a near-IR spectrometer.

18. (Previously Presented) The monitoring system of claim 15, wherein said first device to obtain said skin conductance readings is a sweat probe.

19. (Previously Presented) The monitoring system of claim 15, wherein said first device to obtain said temperature readings is a temperature probe.

20. (Original) The monitoring system of claim 15, wherein the selected time intervals are evenly spaced.

21. (Original) The monitoring system of claim 15, wherein the series of measurement values obtained comprises three or more discrete values.

22. (Original) The monitoring system of claim 21, wherein the further time interval occurs one time interval after the series of measurement values.

23. (Previously Presented) The monitoring system of claim 35, wherein both skin conductance readings and temperature readings are used to predict the likelihood of a hypoglycemic event at the further time interval.

24. (Original) The monitoring system of claim 21, wherein said predicting of a measurement value at a further time interval is carried out using said series of three or more measurement values in a series function represented by:

$$y_{n+1} = y_n + \alpha(y_n - y_{n-1}) + \frac{\alpha^2}{2}(y_n - 2y_{n-1} + y_{n-2}) \qquad (7)$$

wherein y is the measurement value of glucose, n is the time interval between measurement values, and α is a real number between 0 and 1.

25. (Currently Amended) The monitoring system of claim 24, wherein the series function is used to predict the value of y_{n+1} ~~and the~~ wherein time interval n+1 occurs one time interval after the series of measurement values is obtained.

26. (Currently Amended) One or more microprocessors comprising programming to control

(i) a sensing mechanism to obtain a series of raw signals at selected time intervals, wherein the raw signal is related to an amount or concentration of glucose in a subject, (ii) a first device to obtain either a series of skin conductance readings or a series of temperature readings from the subject, (iii) correlating the raw signals with measurement values indicative of the amount or concentration of glucose present in the subject to obtain a series of glucose measurement values, (iv) predicting a glucose measurement value at a further time interval, which occurs after the series of measurement values is obtained, (v) comparing said predicted measurement value to a predetermined value, wherein a predicted measurement value lower than the predetermined value is designated to be hypoglycemic, (v) controlling

the device for measuring skin conductance readings or temperature readings of the subject, (vi) comparing said skin conductance readings or temperature readings with a threshold parameter value or trend of parameter values to determine whether said skin conductance readings or temperature readings indicate a hypoglycemic event, and (vii) predicting a hypoglycemic event in said subject when both (a) comparing said predicted measurement value to said threshold glucose value indicates a hypoglycemic event at said further time interval, and (b) comparing said skin conductance readings or temperature readings with a threshold parameter value or trend of parameter values indicates a hypoglycemic event.

27. (Original) The one or more microprocessors of claim 26, wherein the sensing mechanism comprises a biosensor having an electrochemical sensing element.

28. (Original) The one or more microprocessors of claim 26, wherein the sensing mechanism comprises a near-IR spectrometer.

29. (Original) The one or more microprocessors of claim 26, wherein the selected time intervals are evenly spaced.

30. (Original) The one or more microprocessors of claim 26, wherein the series of measurement values obtained comprises three or more discrete values.

31. (Original) The one or more microprocessors of claim 26, wherein the further time interval occurs one time interval after the series of measurement values.

32. (Previously Presented) The one or more microprocessors of claim 36, wherein both skin conductance readings and temperature readings are used to predict the likelihood of a hypoglycemic event at the further time interval.

33. (Original) The one or more microprocessors of claim 30, wherein the predicting a glucose measurement value at a further time interval is carried out using said series of three or more measurement values in a series function represented by:

$$y_{n+1} = y_n + \alpha(y_n - y_{n-1}) + \frac{\alpha^2}{2}(y_n - 2y_{n-1} + y_{n-2}) \qquad (7)$$

wherein y is the measurement value of glucose, n is the time interval between measurement values, and α is a real number between 0 and 1.

34. (Currently Amended) The one or more microprocessors of claim 33, wherein the series function is used to predict the value of y_{n+1} ~~and the~~ wherein time interval n+1 occurs one time interval after the series of measurement values is obtained.

35. (Previously Presented) The monitoring system of claim 15, further comprising a second device and wherein said first device comprises a sweat probe to obtain said skin conductance readings and said second device comprises a temperature probe to obtain said temperature readings.

36. (Previously Presented) The one or more microprocessors of claim 26, further comprising a second device and wherein said first device comprises a sweat probe to obtain said skin conductance readings and said second device comprises a temperature probe to obtain said temperature readings.